

A Blueprint for Learning Mathematics Third Grade

The *Blueprint for Learning* is a companion document for the Tennessee Curriculum Standards which are located at www.tennessee.gov/education. Although the curriculum adopted by the State Board of Education in its entirety remains on the web for additional reference, this reformatted version makes the curriculum more accessible to classroom teachers.

Key features of the reformatted version are:

- All grades for each content area are provided in the printed manual.
- The skills within each grade are identified as to whether they are introduced, developed, or have been mastered and are now being maintained at that level.
- The skills correlating with the state criterion referenced test (CRT) are also identified for classroom instruction.
- In the Language Arts section, the assessed skills (performance indicators) are identified not only for the state's CRT in grades 3-8 but also for the writing assessment in grades 5 and 8.
- This guide makes the planning of instruction for students with varying abilities easier to accomplish.
- Teachers can plan and work together to improve school wide student achievement through curriculum integration across content areas and grade levels.
- Teachers can identify current grade level skills as well as those needed to prepare students for the next year.

Skills are coded and identified as Introduced (I), Developing (D), State CRT and Writing Assessed (A), and Mastered and Maintained (M).

- Introduced (I) skills are new skills presented at that grade level. Even though a skill is considered introduced at a grade level, some development would also occur.
- Developing (D) skills are skills that have been introduced at a previous grade level. At this stage of development the skills are being refined and expanded.
- Assessed (A) skills are those skills that are correlated to the state performance indicators for the CRT portion of the achievement test (grades 3-8) and the writing assessment (grades 5 and 8). The identified skills are formally assessed through the CRT; however, all skills are informally assessed in the classroom.
 - For the purpose of data reporting, assessed (A) skills are grouped into categories indicating related skills and knowledge. For example, grammar, mechanics, and usage are grouped together under the grammar (G) category. Each state assessed indicator included on the Blueprint carries a legend showing that it is assessed and indicating the category in which it will be reported (e.g., Assessed/Grammar=A/G).
- Mastered and Maintained (M) indicates a skill that has been introduced, developed, and assessed. Even though a skill may be formally assessed, the development and expansion of the skill still continues.

KEY

I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY

**N = Number & Operations AT = Algebraic Thinking C = Computation R = Real World Problem Solving
DP = Data Analysis & Probability ME = Measurement G = Geometry GR = Graphs & Graphing**

**NOTE: "A" Indicates the state curriculum (CRT) assessment only.
All the skills ("I" ... "D" ... "A" ... "M") are addressed in classroom assessment.**

MATHEMATICS

Third Grade

NUMBER AND OPERATIONS

The student will identify, represent, order, and compare numbers and compute and solve problems.

Key	Reporting Category	
A	N	Count by 10's, 100's, or 1,000's.
D		Skip count by 10's from any whole number less than 1,000.
D		Read and write whole numbers to 9,999.
A	N	Represent whole numbers to 9,999 with models.
A	N	Identify whole numbers as odd or even.
A	N	Identify the place value of a given digit up to thousands.
A	N	Represent whole numbers up to 10,000 in expanded form (e.g., 1,000's + 100's + 10's + 1's).
D		Connect the spoken or written word names and concrete or pictorial representations (regions or sets) of fractions with denominators up to ten.
A	N	Connect written and pictorial representations of fractions with denominators up to ten.
A	N	Compare fractions with numerators of 1 and denominators up to 10.
I		Compare and order decimal amounts written as money.
A	R	Recognize the value of combinations of coins and bills up to \$5.
A	R	Determine the correct change from a transaction that is less than \$1.00.
D		Order and sequence whole numbers up to 4 digits.
A	N	Compare and order whole numbers up to 9999 using the appropriate symbol (i.e., <, >, and =).
I		Relate skip counting to multiplication.
I		Connect division to sharing situations.
I/D		Demonstrate multiplication using repeated addition (e.g., arrays).
D		Write and identify number sentences that describe situations involving addition, subtraction, and multiplication.
D		Write and explain related addition and subtraction sentences.
A	R	Solve real-world problems using addition or subtraction of whole numbers.
A	C	Add and subtract efficiently and accurately with single-digit whole numbers.
A	C	Add efficiently and accurately with two- and/or three-digit whole numbers.
A	C	Subtract efficiently and accurately with two- and/or three-digit whole numbers.
D		Use a variety of thinking strategies to add and subtract whole numbers (e.g., sums of ten, doubles plus one).
D		Explain the reasonableness of a solution to a computation or to a word problem.
A	N	Use estimation to select a reasonable solution in problem solving (addition and subtraction only).
I		Relate adding doubles to multiplying by two.
I		Use known multiplication facts to determine a related product (e.g., 9 x 7 is 7 less than 10 x 7).
A	C	Use the multiplication facts 0, 1, 2, 5, and 10 efficiently and accurately.
D		Explain and justify solution strategies used in problem solving.

KEY

I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY

N = Number & Operations AT = Algebraic Thinking C = Computation R = Real World Problem Solving
DP = Data Analysis & Probability ME = Measurement G = Geometry GR = Graphs & Graphing

NOTE: "A" Indicates the state curriculum (CRT) assessment only.
All the skills ("I" ... "D" ... "A" ... "M") are addressed in classroom assessment.

D		Select and use an appropriate strategy to solve word problems (e.g., organized list, guess and check, diagram, and table).
I		Mentally calculate the sum or difference of any two numbers up to 100.
D		Use strategies, including rounding, to estimate in story problems.

ALGEBRA

The student will sort and classify objects; create, extend, and describe patterns; and represent number sentences with words, objects, and pictures.

A	AT	Sort objects by two attributes.
D		Sort objects by two or more attributes.
M		Devise, carry out, and explain how a group of objects has been sorted.
A	AT	Identify the rules by which objects or numbers have been sorted.
D		Recognize, describe, complete, translate, or create patterns of figures or numbers.
A	AT	Extend repeating and growing numerical or geometric patterns.
A	AT	Represent repeating geometric patterns as repeating numerical patterns.
D		Describe a growing pattern, involving objects, shapes, or numbers.
A	AT	Determine the output number for a particular input number given a one-operation function rule involving addition or subtraction.
D		Demonstrate knowledge (with words or symbols) of the commutative properties of addition and multiplication.
D		Show or represent and solve open sentences, involving addition, subtraction, and multiplication, with concrete objects or pictures.
A	AT	Solve open sentences that involve addition and subtraction of whole numbers zero to twenty.
A	AT	Connect open sentences to real-world situations.
D		Demonstrate knowledge and understanding of grade level mathematical terms.
I		Demonstrate understanding that an equation is a number sentence stating two quantities are equal.
D		Use the commutative property of addition and multiplication.
D		Show that subtraction is not commutative.
M		Apply the addition and subtraction properties of 0 (adding or subtracting 0 doesn't change a number).
I		Apply the zero and identity properties of multiplication (adding 0 or multiplying by 1 doesn't change a number).
I		Use arrays to represent the commutative property of multiplication.
D		Describe qualitative change (e.g., a student growing taller).
D		Describe quantitative change (e.g., a student growing two inches in one year).

GEOMETRY

The student will identify, describe, and create basic shapes and describe relative positions and directions.

D		Identify, build, draw, and compare two- and three-dimensional geometric figures (e.g. rectangle, square, triangle, circle, cube, cylinder, sphere, and cone).
A	G	Name two-dimensional geometric figures (e.g., rectangle, square, triangle, circle, cube, cylinder, sphere, and cone).
A	G	Name three-dimensional geometric figures (e.g., rectangle, square, triangle, circle, cube, cylinder, sphere, and cone).
A	G	Recognize geometric figures that are the same size and shape.
A	G	Identify the line of symmetry in a two-dimensional design or shape.

KEY

I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY

N = Number & Operations AT = Algebraic Thinking C = Computation R = Real World Problem Solving
DP = Data Analysis & Probability ME = Measurement G = Geometry GR = Graphs & Graphing

NOTE: "A" Indicates the state curriculum (CRT) assessment only.
All the skills ("I" ... "D" ... "A" ... "M") are addressed in classroom assessment.

D		Draw lines of symmetry in two-dimensional designs and shape.
I		Identify and draw horizontal and vertical lines.
I		Identify and draw diagonals of polygons.
D		Identify the position of $\frac{1}{2}$, $\frac{1}{3}$, or $\frac{1}{4}$ on the number line.
I		Identify a location on a grid using whole number coordinates.
A	AT	Use appropriate mathematical language to find a point on a grid using whole number coordinates.
D		Predict and identify the results of sliding, flipping, or turning two-dimensional shapes.
A	G	Identify the result of a transformation that has been applied to a simple two-dimensional geometric shape (i.e., flips or slides).

MEASUREMENT

The student will apply measurement concepts of time, length, weight, capacity, and temperature.

D		Determine when an estimate of a measurement is sufficient.
D		Demonstrate understanding of the concepts of perimeter, area, and capacity.
A	R	Solve real-world problems using a calendar.
A	R	Solve real-world problems involving addition and subtraction of one- or two-digit measurements.
D		Use strategies to estimate or determine length, perimeter, area, capacity, weight, time, and temperature.
A	ME	Use estimation to determine if a length measurement is reasonable.
D		Explain the relationships among inches, feet, and yards.
D		Measure to the nearest centimeter, foot, half-inch, and inch.
A	ME	Measure length to the nearest centimeter and inch.
D		Measure to the nearest liter, cup, pint, quart, and gallon.
D		Measure to the nearest ounce, pound, kilogram, and gram.
D		Find the perimeter of polygons.
A	ME	Find the perimeter of a rectangle on a grid.
D		Select and apply the most appropriate standard units of length, area, capacity, weight, time, and temperature.
A	ME	Select an appropriate standard unit to measure length.
D		Solve real-world problems involving measurement.
A	R	Solve real-world problems involving elapsed time to the half-hour.
A	ME	Read thermometers with Fahrenheit and Celsius scales (positive whole number temperatures).
A	ME	Read and write time at five-minute intervals.
A	ME	Read and write time to the nearest hour, half-hour, and quarter-hour.

DATA ANALYSIS AND PROBABILITY

The student will make simple graphs using concrete objects and pictures and describe events as likely or unlikely.

D		Write questions and gather data to answer questions.
D		Interpret and construct tables using tally marks.
D		Construct pictographs and bar graphs.

KEY

I = Introduced **D** = Developing **A** = State Assessed **M** = Mastered

REPORTING CATEGORY

N = Number & Operations **AT** = Algebraic Thinking **C** = Computation **R** = Real World Problem Solving
DP = Data Analysis & Probability **ME** = Measurement **G** = Geometry **GR** = Graphs & Graphing

NOTE: "A" Indicates the state curriculum (CRT) assessment only.
All the skills ("I" ... "D" ... "A" ... "M") are addressed in classroom assessment.

A	DP	Interpret pictographs.
A	DP	Interpret bar graphs.
D		Read and interpret tables, bar graphs, and pictographs.
D		Make and justify predictions based on data gathered and displayed.
D		Identify all possible outcomes of a simple experiment (e.g., spinner, coin toss, and number cubes).
A	DP	Determine whether an event is certain, possible, or impossible.
A	DP	Determine the most likely, least likely, or equally likely outcomes in simple experiments (i.e., spinner, number or color cube).
A	DP	Select all possible outcomes of a simple experiment (i.e., spinner, coin toss, number or color cube).
A	DP	Solve real-world problems in which data is represented in tables.

KEY

I = Introduced D = Developing A = State Assessed M = Mastered

REPORTING CATEGORY

N = Number & Operations AT = Algebraic Thinking C = Computation R = Real World Problem Solving
DP = Data Analysis & Probability ME = Measurement G = Geometry GR = Graphs & Graphing

NOTE: “A” Indicates the state curriculum (CRT) assessment only.
All the skills (“I” ... “D” ... “A” ... “M”) are addressed in classroom assessment.